NRCS
Natural Resources
Conservation Service

UPLAND WILDLIFE HABITAT MANAGEMENT

N. C. Practice Job Sheet 645

Prepared for: _____

Prepared by: _____

Farm: _____ Tract: _____ Date: _____

Upland Wildlife Habitat Management can help develop the wide variety of forested and open upland habitats that wild turkeys and other wildlife require.

This practice involves management of grasses, broadleaf weeds and woody plants to produce good wildlife habitat.

DEFINITION

Creating, restoring, maintaining, or enhancing habitat elements for wildlife that use uplands for a portion of their life cycle.

PURPOSES

- Encouraging wildlife to inhabit land,
- Achieving sustainable wildlife populations,
- Improving wildlife viewing and hunting opportunities,
- Conserving native plant resources.

USE

Wildlife management can be used to benefit a single type of wild animal or groups of wild animals. The specifications will be developed based upon the client's wildlife conservation objectives.

WILDLIFE CONSERVATION OBJECTIVES

Implementation of this practice is intended to help address the following wildlife conservation objectives:

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CONTROLLING EXOTIC COOL-SEASON PLANTS:

Applicable on improved pastures and cool season turf areas where habitat-forming vegetation will be established.

- Apply an appropriate herbicide according to its label instructions. Please consult the NC Cooperative Extension Service for advice on herbicide selection and use.
- If a heavy residue of dead plant matter remains after spraying, use the NRCS Prescribed Burning practice to encourage growth of warm season plants.
- If post-treatment inspection reveals incomplete pest plant control, a repeated herbicide treatment is needed.
- Once the pest plant(s) are controlled, re-vegetate the field using either a cover crop and volunteer vegetation, or a permanent planting selected from Appendix 1 or 2.

Mixtures of native grasses and broadleaf plants (called forbs) improve habitat condition and add aesthetic appeal to the landscape.

CONTROLLING EXOTIC WARM SEASON VEGETATION:

Applicable on improved pasture and warm season turf areas where habitat forming vegetation will be established.

- Apply an appropriate herbicide, according to its label instructions during the summer (see Fig. 2, for dates). A minimum of two herbicide treatments is normally required for adequate control.
- Consult the NC Cooperative Extension Service for advice on herbicide selection and use.
- If pest plant control is incomplete, repeated herbicide treatment is needed.
- Once the pest plant(s) are controlled, re-vegetate the field using either a cover crop and volunteer vegetation, or a permanent planting selected from Appendix 1 or 2.

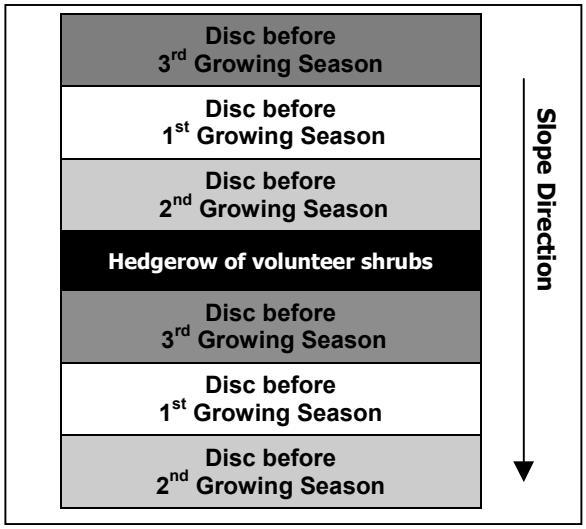
LIGHT STRIP DISKING:

Strip disking is a "rest-rotation system" used to manage grassy and herbaceous habitat. Vegetation is allowed to grow for 3 to 5 years before disking disturbs the vegetation, causing a mosaic of vegetation to develop in the field.

Strip disking is applicable where exotic grasses and undesirable woody vegetation have been adequately controlled by other means; and slopes are 7% and flatter.

- Disked strips should be laid out across the dominant slope (following field contours).
- Minimum width of individual strips is 30 feet;
- Disc each strip on a 3 to 5 year interval between February 15 to April 15.
- Run disc blades straight, at 2-4" depth to lightly stir the soil surface and crush vegetation. At least 30% of ground surface should remain covered by plant residue.

Fig. 1 Conceptual designs for a field with 3-yr. strip disking rotation and a hedgerow of volunteer shrubs dividing the field's length.



The objectives of light discing are setting back growth of perennials and encouraging volunteer annuals- it is not for destroying the cover.

ESTABLISHING NATIVE GRASSES, FORBS AND TEMPORARY COVER:

Applicable where volunteer vegetation alone will not meet the habitat conservation objectives of the land manager.

- Only plants listed in Appendix 1 are suitable for this practice. The NRCS State Biologist or State Plant Materials Specialist may authorize substitutions.
- Follow this step by step process and any additional specifications provided by the local planner:

  a. **Determine Seed Quality-** All seed must have been tested and labeled for purity and germination to enable Pure Live Seed (**PLS**) calculations that determine proper planting rates. Use attached Specifications along with information from the seed tag to determine how much total seed is needed.

  Ask your seed dealer if they sell native grass on a Pure Live Seed (PLS) basis.

  b. **Kill off Existing Sod**- Refer to grass control instructions on the previous page of this job sheet.

  c. **Amend the Soil**- Correct soil pH to reach the range of 5.5 – 6.9. Apply fertilizer with an N-P-K ratio of 0-1-1, or 0-0-1 to correct phosphorus or potassium deficiency indicated by a soil test. Do not apply nitrogen fertilizer during establishment.

  d. **Prepare the Seedbed**- The seedbed must be essentially free of competing vegetation. It should be firm enough to permit seed placement at the desired depth and protected against erosion. A firm seedbed should hardly reveal adult footprints. This will allow for placement of the seeds at a depth of 1/4 to 3/4 of an inch into the soil.

  e. **Plant the Seed**- Use a grain drill, grass drill, air seeder, or a drop seeder specifically designed for native grass establishment to ensure correct seed distribution and planting depth (see Fig. 2 for seeding depth).

  f. **Manage Competing Vegetation**- During the establishment year, monitor growth of seedlings and carefully mow tops off of competing vegetation (above the height of emerging native grasses) before the pest plants set seed. Correct use of appropriately labeled herbicide is also acceptable.

Fig. 2 Proper Seeding Depth

Soil Texture	Seeding Depth
Fine to Medium	1/4 to 3/4 inch
Coarse	1/2 to 1 inch

Fig. 3 General Planting Seasons. (NOTE: Planners may adjust dates to local/site conditions.)

Permanent Cover	TN line east to I-77	Between I-77 & I-95	East of I-95
Spring	March 15 to May 1	Feb. 15 to Mar. 31	Feb. 10 to Mar. 31
Summer	May 1 to May 31	April 1 to June 1	April 1 to June 15
Fall	Aug. 1 to Oct. 25	Aug. 15 to Oct. 30	Sept. 1 to Nov. 15
Temporary Cover			
Fall	Oct. 15 to March 20	Oct. 25 to Feb. 20	Nov. 10 to March 1
Summer	May 25 to Aug. 5	May 25 to Aug. 20	June 10 to Sept. 5

A no-till drill designed to handle tiny or fluffy seeds of native grass and wildflowers helps ensure uniform seed distribution and correct planting depth.

ESTABLISHING TREES & SHRUBS:

Applicable where trees and shrubs are needed to meet habitat requirements of desired wildlife.

- Species and planting rates shall be selected from Appendix 2 and established according to the NRCS Tree/Shrub Establishment practice. Use the Tree/Shrub Establishment job sheet.

PERMANENT FOREST OPENINGS:

Applicable on landscapes dominated by closed-canopy forest.

- Openings shall be 0.5 to 2.0 acres in size if laid out in patches.
- Habitat in the opening is managed by manipulating volunteer vegetation, or by establishing plants selected from Appendix 1.

Small trees have been removed and "brushpiled", but a single large tree was left when this opening was created. Strip disking is used to conserve the "weedy" condition. The opening provides natural food and cover resources for wild turkey, deer, songbirds, raptors, insects and other wildlife.

- Distribute openings across the landscape to provide maximum diversity without fragmenting habitat.
- Do not locate an opening adjacent to a public road.
- Establish openings by leaving areas unplanted during reforestation work, or by mechanical removal of woody vegetation.
- Heavy thinning in a 100-foot zone adjacent to forest openings provides a transition zone and increases the benefits of the opening for some wildlife species. Use the NRCS Forest Stand Improvement practice.

A special wick bar, called "The Weed Sweep" is used to precisely apply herbicide to undesirable woody plants that are out-competing native grassy vegetation.

OPERATION AND MAINTENANCE:

- After the establishment year, minimize disturbance of habitat during the wildlife nesting season, which runs April 15 through September 15.
- Whole field mowing and haying is not acceptable for the purposes of this practice.
- Use of prescribed fire, herbicide, or disking is highly preferred to mowing.
- If no practical alternative to haying or mowing exists, then their use should be limited to less than 50% of the fields. Twenty ft. borders and odd corners shall be left around field perimeters, and stubble height shall be no lower than 9 inches.
- The habitat must be protected from improper and unplanned grazing. Follow the NRCS Prescribed Grazing practice criteria if grazing will occur.

Wildlife Cover Specifications for NRCS 645/327, and CRP practices

IF SHRUBS OR TREES WILL BE PLANTED, THE NRCS TREE/SHRUB ESTABLISHMENT JOB SHEET WILL BE FURNISHED TO ACCOMPANY THIS SPECIFICATION.

Client: _____ **Tract:** _____ **Date:** _____

Calculate Bulk Seed Needed for PLS Specs. *(To be completed by participant.)*

Field	(1) Species to be seeded (Appendix 1)	(2) Cultivar or Variety	(3) Per Acre Planting Rate ✓ Use Appendix 1 ✓ Indicate if rate is **Bulk** or **PLS**	(4) Temporary Cover Crop Seeding Date	(5) Permanent Cover Seeding Date	(6) % Purity ✓ *From seed tag* ✓ *Express as decimal*	(7) % Germination ✓ *From seed tag, or "Ragdoll Test"** ✓ *Express as decimal*	(8) Bulk lbs./ac. needed = (3)/(6x7)	(9) Acres to be seeded	(10) Total Bulk lbs. needed = (8)x(9)
Example 1: Switchgrass		*'Blackwell'*	*6 lbs. PLS / ac.*			*0.95*	*0.52*	*9 BULK lbs./ac.*	*12 ac.*	*108 BULK lbs.*
Example 2: Wheat		*NA*	*90 lbs. BULK / ac.*			-	-	*90 BULK*	*12 ac.*	*1,080 BULK*

* The "Ragdoll Test" is a way to verify seed germination rates at home. Consider running this test if the seed tag's date is more than 9 months old, or if you have performed an artificial stratification process on the seed. Contact NRCS for a copy of the "Ragdoll Test" instructions.

Seedbed Preparation Method(s) _____

Additional Specifications: _____

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Wildlife Habitat Map for NRCS 645/327, and CRP practices

An aerial photo or drawing of the area to be managed can be shown below. Other relevant information, such as complementary practices, or additional specifications may be included.

Operation and Maintenance Requirements:

Appendix 1-
Native Grasses, Forbs, and Nurse Crops

	Adapted to: Coastal plain (C), Piedmont (P), Mountains (M)	Planting Season	Single Species Stand (Lbs./acre)	TWO Species Mix (Lbs./acre)	THREE Species Mix (Lbs./acre)	FOUR Species Mix (Lbs./acre)	FIVE Species Mix (Lbs./acre)
NATIVE GRASSES			All rates for native grasses are in PLS.				
Bluestem, big	C, P, M	Spring	6 PLS	3 PLS	2 PLS	1.5 PLS	1.2 PLS
Bluestem, little	C, P, M	Spring	5 PLS	2.5 PLS	1.6 PLS	1.25 PLS	1 PLS
Coastal panicgrass, 'Atlantic'	C, P	Spring	6	3	2	1.5	1.2
Dallisgrass	C, P	Spring	7	3.5	2.3	1.75	1.4
Deertongue, 'Tioga'	P, M	Spring	6	3	2	1.5	1.2
Eastern gamagrass	C, P, M	Spring	4	2	1.3	1	0.8
Indiangrass	C, P, M	Spring	6	3	2	1.5	1.2
Switchgrass (any variety)	C, P, M	Spring	6	3	2	1.5	1.2
FORBS (includes legumes)			All rates for forbs are in PLS unless otherwise noted.				
'Lathco' flatpea	C, P, M	Fall	Bulk 15	7.5	5	3.75	3
Beggarweed (Tickclover)	C, P	Fall	8	4	2.6	2	1.6
Birdsfoot trefoil	C, P, M	Fall	4	2	1.3	1	0.8
Black-eyed susan	C, P, M	Fall	1	0.5	0.3	0.25	0.2
Chufa	C, P, M	Spring	Bulk 30	15	10	7.5	6
Clover, red	C, P, M	Spring	Bulk 12	6	4	3	2.5
Clover, white	C, P, M	Fall	2	1	0.7	0.5	0.4
Common lespedeza	C, P, M	Spring	Bulk 15	7.5	5	3.75	3
Coreopsis	C, P, M	Spring	1	0.5	0.3	0.25	0.2
Gallardia	C, P, M	Fall	1	0.5	0.3	0.25	0.2
Kobe lespedeza	C, P, M	Spring	Bulk 15	7.5	5	3.75	3
Korean lespedeza	C, P, M	Spring	Bulk 15	7.5	5	3.75	3
Maxmillian sunflower	C, P, M	Fall	1	0.5	0.3	0.25	0.2
Partridge pea	C, P, M	Spring	6	3	2	1.5	1.2
Purple coneflower	C, P, M	Fall	1	0.5	0.3	0.25	0.2
Shrub lespedeza 'VA-70', 'Amquail'	C, P, M	Spring	Bulk 10	5	3.3	2.5	2
NURSE CROPS (temporary cover)			All rates for nurse crops are in bulk.				
Buckwheat	C, P, M	Spring	50	25	16.7	12.5	10
Barley	C, P, M	Fall	90	45	30	22.5	18
Sudex, Egyptian Wheat	C, P	Summer	10	5	3.3	2.5	2
Millet (any variety)	C, P, M	Summer	25	12.5	8.3	6.3	5
Oats	C, P, M	Fall	90	45	30	22.5	18
Rye, grain	C, P, M	Fall	90	45	30	22.5	18
Sorghum, grain (Milo)	C, P, M	Summer	15	7.5	5	3.75	3
Wheat	C, P, M	Fall	90	45	30	22.5	18

Appendix 2-
Wildlife Shrubs and Trees

SHRUBS/TREES	Wetness Tolerance: High, Moderate, or Low	Height at Maturity (ft.)	Noted for: Flowers, Berries, Fruit, Nuts, Cover, or Habitat	Spacing (ft.)
Apple	High-Moderate	30-40	Fruit	15 x 15
Bald cypress	High	100-120	Seeds/Habitat	20 x 20
Beautyberry	Moderate-Low	5-10	Drupes	10 x 10
Beech	High-Moderate	60-80	Nuts/Cover	20 x 20
Black walnut	Moderate	70-90	Nuts	20 x 20
Blackberry	Moderate	4-6	Berries/Cover	10 x 10
Blueberry	High-Moderate	4-6	Berries	10 x 10
Chinquapin	Low	40	Nuts	15 x 15
Chokeberry	High-Moderate	12-15	Fruit	10 x10
Crabapple	High	30	Fruit	15 x 15
Dogwood, flowering	High-Low	25	Fruit	15 x 15
Elderberry	High-Moderate	10-15	Berries	15 x 15
Gallberry	High-Moderate	3-6	Drupes/Cover	10 x10
Hackberry	High-Moderate	50-90	Drupes	20 x 20
Hawthorn	High-Low	20-40	Fruit/Cover	15 x 15
Hazelnut	Moderate	10	Fruit/Cover	10 x 10
Hickory	High-Low	Spp. Depend.	Nuts	20 x20
Holly	High-Moderate	40-70	Fruit/Cover	15 x 15
Mulberry	Moderate	60	Fruit	20 x 20
Oaks (many varieties)	High-Low	Spp. Depend.	Nuts	20 x 20
Pecan	Moderate	100	Nuts	20 x 20
Persimmon	Moderate-Low	20-70	Fruit	20 x 20
Plum, American	High-Moderate	20-30	Fruit/Cover	15 x 15
Plum, Chickasaw	Moderate	6-12	Fruit/Cover	10 x 10
Red cedar	Moderate-Low	40-60	Cones/Cover	20 x 20
Serviceberry	High-Moderate	40	Fruit	20 x 20
Sugarberry	High-Moderate	80	Drupes	20 x 20
Sumac	Moderate-Low	12	Fruit	10 x 10
Winterberry	Moderate	12	Drupes	10 x10
Yaupon	High-Moderate	20	Fruit/Cover	15 x 15